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(54) **DRIVER REACTION TIME MEASUREMENT**

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B60K 28/06 (2006.01)

(52) **U.S. Cl.**
CPC ***B60K 28/06*** (2013.01); ***B60K 28/066*** (2013.01); *B60Y 2400/90* (2013.01); *B60Y 2400/30* (2013.01)

(58) **Field of Classification Search**
CPC .. B60K 28/06; B60K 28/066; B60K 2400/90; B60K 2400/30
USPC 701/1
See application file for complete search history.

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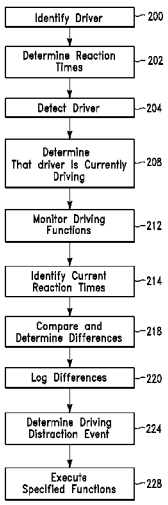
(57) **ABSTRACT**

A method and system for measuring driver reaction times is provided. The method includes identifying a driver of a vehicle and determining reaction times associated with a set of driving functions executed by the driver during a first driving process. The driver is determined to be currently driving the vehicle and currently executed driving functions are monitored. Current reaction times associated with the currently executed driving functions are identified and compared to the reaction times. Differences between the current reaction times and the reaction times are determined and logged. The differences indicate that the driver is currently executing a first driving distraction event and in response specified functions associated with the currently executed driving functions and/or the first driving distraction event are executed.

20 Claims, 3 Drawing Sheets



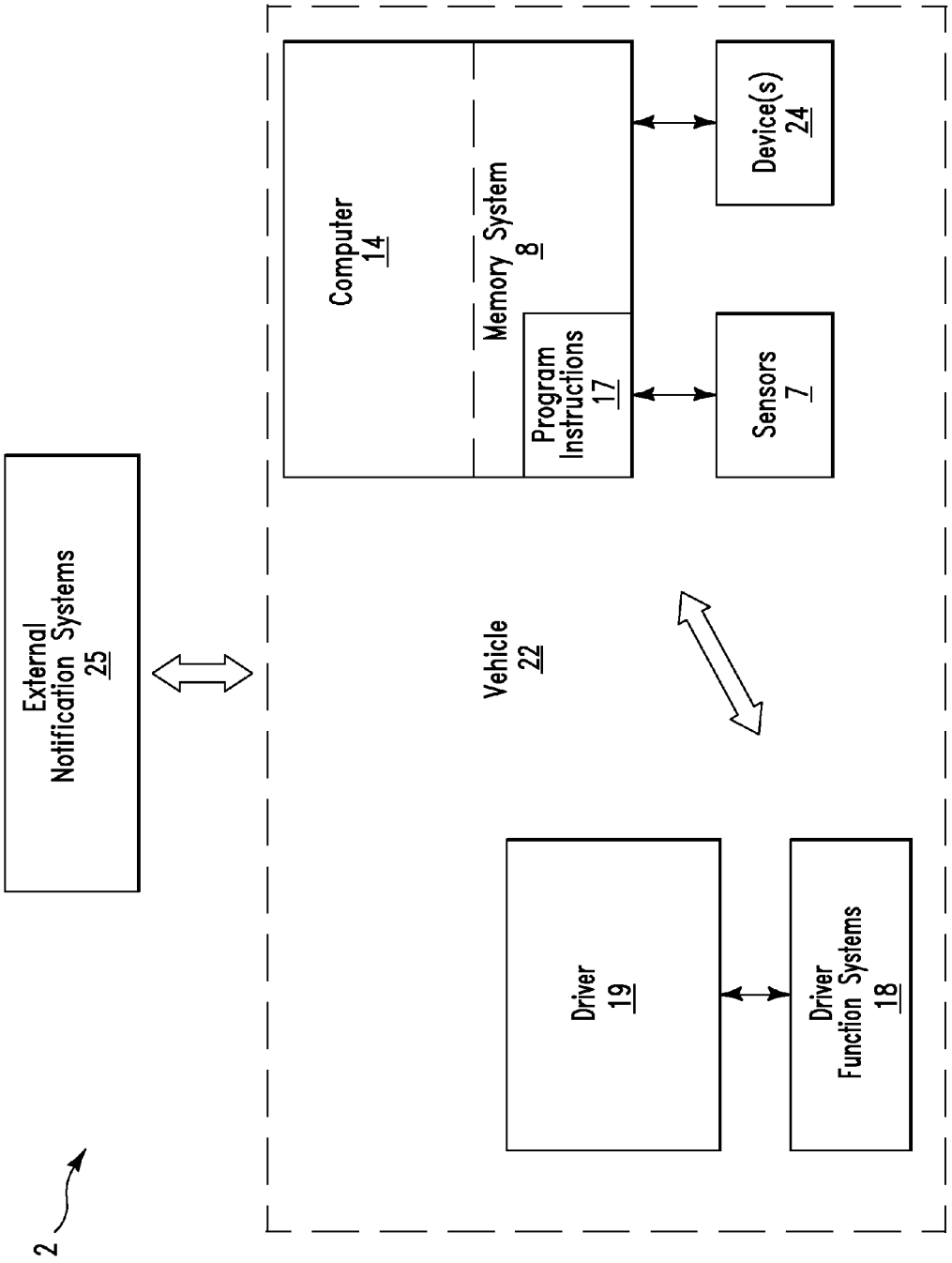

2
External Notification Systems 25
Vehicle 22
Computer 14
Memory System 8
Program Instructions 17
Device(s) 24
Sensors 7
Driver 19
Driver Function Systems 18

FIG. 1

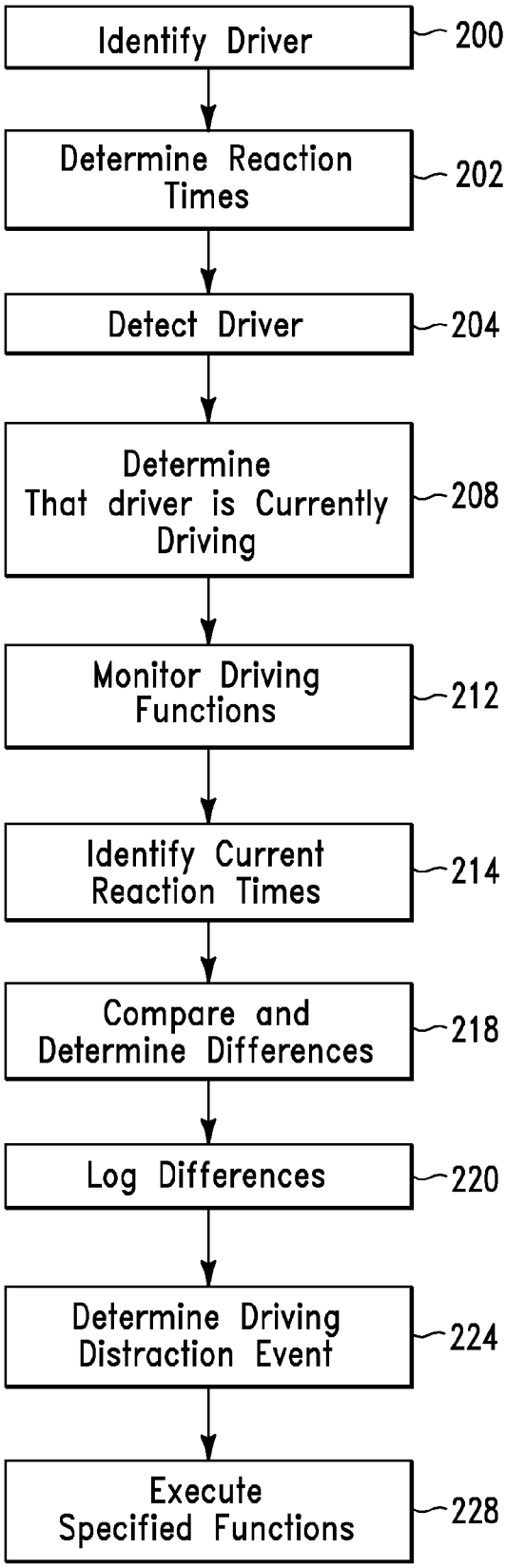

Identify Driver
200
Determine Reaction Times
202
Detect Driver
204
Determine That driver is Currently Driving
208
Monitor Driving Functions
212
Identify Current Reaction Times
214
Compare and Determine Differences
218
Log Differences
220
Determine Driving Distraction Event
224
Execute Specified Functions
228

FIG. 2

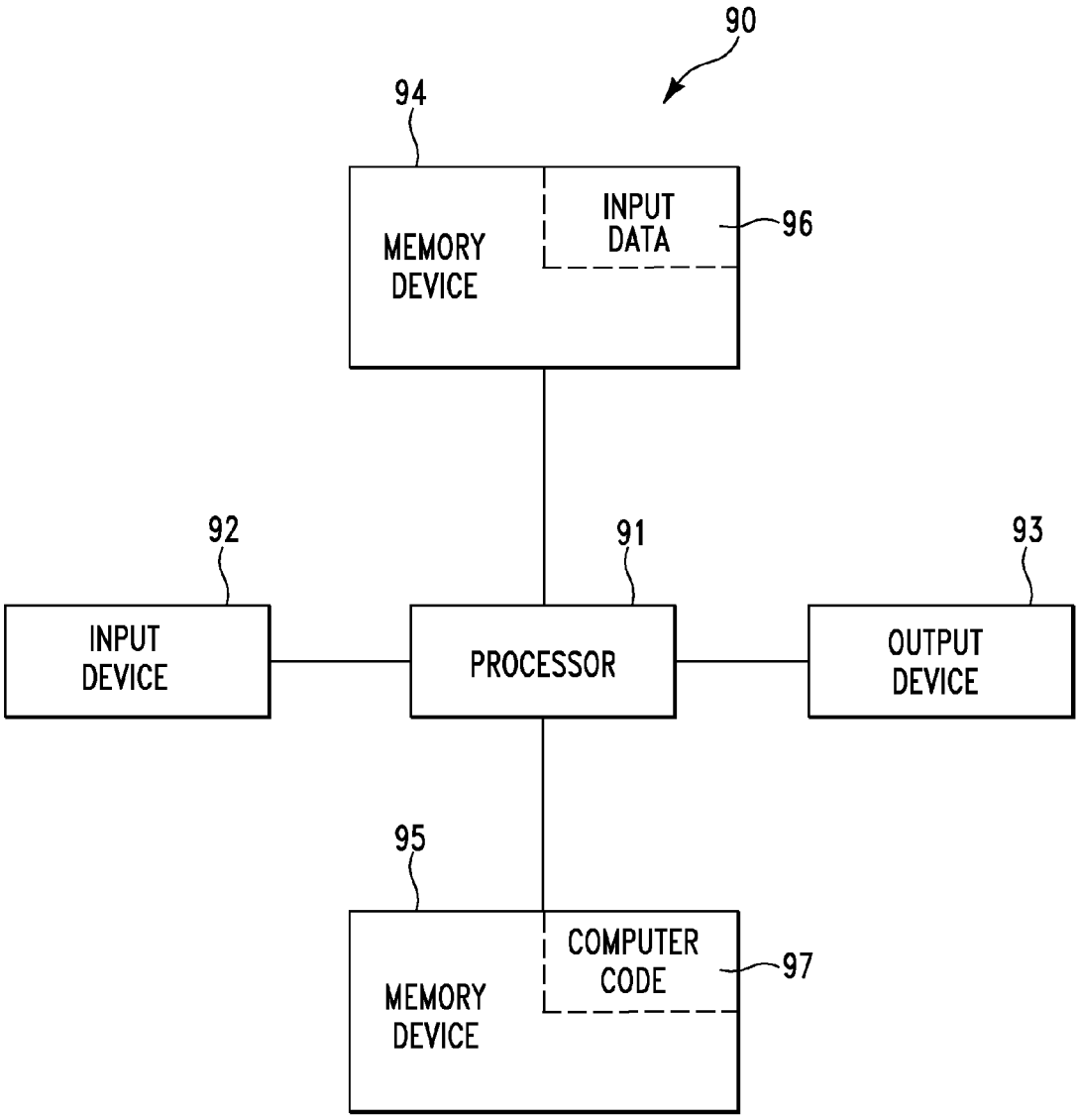

90
94
MEMORY DEVICE
INPUT DATA
96
92
91
93
INPUT DEVICE
PROCESSOR
OUTPUT DEVICE
95
MEMORY DEVICE
COMPUTER CODE
97

FIG. 3

DRIVER REACTION TIME MEASUREMENT

BACKGROUND

1. Field of the Invention

The present invention relates generally to a method for measuring driver reaction times, and in particular to a method and associated system for determining driver reaction times during driving distraction events.

2. Description of the Related Art

Determining driver distraction issues typically includes an inaccurate process with little flexibility. Evaluating solutions to driver distraction issues may include a complicated process that may be time consuming and require a large amount of resources. Accordingly, there exists a need in the art to overcome at least some of the deficiencies and limitations described herein above.

SUMMARY

A first aspect of the invention provides a method comprising: determining, by a computer processor, reaction times associated with a set of driving functions executed by a driver of a vehicle, wherein the set of driving functions are executed by the driver during a first driving process of the vehicle; after the determining the reaction times, detecting by the computer processor, the driver in the vehicle; determining, by the computer processor, that the driver is currently driving the vehicle; monitoring, by the computer processor, currently executed driving functions associated with the set of driving functions; identifying, by the computer processor, current reaction times associated with the currently executed driving functions; comparing, by the computer processor, the current reaction times with the reaction times; determining, by the computer processor based on results of the comparing, differences between the current reaction times with the reaction times; logging, by the computer processor, the differences to a driver action log; determining, by the computer processor based on the driver action log, that the driver is currently executing a first driving distraction event; and executing, by the computer processor based on the determining that the driver is currently executing a first driving distraction event, specified functions associated with the currently executed driving functions and/or the first driving distraction event.

A second aspect of the invention provides a computing system comprising a computer processor coupled to a computer-readable memory unit, the memory unit comprising instructions that when executed by the computer processor implements a method comprising: determining, by the computer processor, reaction times associated with a set of driving functions executed by a driver of a vehicle, wherein the set of driving functions are executed by the driver during a first driving process of the vehicle; after the determining the reaction times, detecting by the computer processor, the driver in the vehicle; determining, by the computer processor, that the driver is currently driving the vehicle; monitoring, by the computer processor, currently executed driving functions associated with the set of driving functions; identifying, by the computer processor, current reaction times associated with the currently executed driving functions; comparing, by the computer processor, the current reaction times with the reaction times; determining, by the computer processor based on results of the comparing, differences between the current reaction times with the reaction times; logging, by the computer processor, the differences to a driver action log; determining, by the computer processor based on the driver action log, that the driver is currently executing a first driving distraction event; and executing, by the computer processor based on the determining that the driver is currently executing a first driving distraction event, specified functions associated with the currently executed driving functions and/or the first driving distraction event.

A third aspect of the invention provides a computer program product for technical solution analysis, the computer program product comprising: one or more computer-readable, tangible storage devices; program instructions, stored on at least one of the one or more storage devices, to determine reaction times associated with a set of driving functions executed by a driver of a vehicle, wherein the set of driving functions are executed by the driver during a first driving process of the vehicle; program instructions, stored on at least one of the one or more storage devices, to detect the driver in the vehicle after determining the reaction times; program instructions, stored on at least one of the one or more storage devices, to determine that the driver is currently driving the vehicle; program instructions, stored on at least one of the one or more storage devices, to monitor currently executed driving functions associated with the set of driving functions; program instructions, stored on at least one of the one or more storage devices, to identify current reaction times associated with the currently executed driving functions; program instructions, stored on at least one of the one or more storage devices, to compare the current reaction times with the reaction times; program instructions, stored on at least one of the one or more storage devices, to determine differences between the current reaction times with the reaction times; program instructions, stored on at least one of the one or more storage devices, to log the differences to a driver action log; program instructions, stored on at least one of the one or more storage devices, to determine that the driver is currently executing a first driving distraction event; and program instructions, stored on at least one of the one or more storage devices, to execute specified functions associated with currently executed driving functions and/or a first driving distraction event.

The present invention advantageously provides a simple method and associated system capable of determining driver distraction issues.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

FIG. **1** illustrates a system for providing a means for associating driver reaction times during a driver distraction event, in accordance with embodiments of the present invention.

FIG. **2** illustrates an algorithm detailing a process flow enabled by the system of FIG. **1** for providing a means for associating driver reaction times during a driver distraction event, in accordance with embodiments of the present invention.

FIG. **3** illustrates a computer apparatus used by the system of FIG. **1** for providing a means for associating driver reaction times during a driver distraction event, in accordance with embodiments of the present invention.

DETAILED DESCRIPTION

FIG. **1** illustrates a system **2** for providing a means for associating driver reaction times during a driver distraction event, in accordance with embodiments of the present invention. System **2** may perform a baseline measurement of drivers' normal reaction times during a current driving event. System **2** then monitors and measures a current reaction time during a driver distraction event such as, inter alia, cell phone

usage. Results of the current reaction time measurement are presented to the driver **19** and/or additional parties to determine if the driver distraction event should be discontinued.

System **2** of FIG. **1** includes external notification systems **25** communicatively connected to a vehicle **22**. The vehicle includes a computer **14**, driver function systems **18**, sensors **7**, and devices **24** (i.e., driver distraction devices). Computer **14** is communicably connected to driver function systems **18**, sensors **7**, and devices **24**. Computer **14** may include any type of computing system(s) including, inter alia, a computer (PC), a laptop computer, a tablet, memory system **8** which stores program instructions **17** for associating driver reaction times during a driver distraction event. Program instructions **17** transmit a result of the association analysis to external notification systems **25**.

System **2** indicates a driver's impairment level while engaged in distracting activities such as, inter alia, texting or talking on a cellular telephone. System **2** measures a driver's reaction times to determine if the distracting activities event should be discontinued.

System **2** associates a driver reaction time while engaged in distraction activities and delivers results to the driver at a time when vehicle **22** is not in operation. Distraction activities may include, inter alia, talking, texting, unlocking a phone with a password, entering a GPS navigation destination, tuning a radio or music player, etc. System **2** may performs a baseline measurement of the driver's normal reaction times while driving without distractions. Additionally, system **2** monitors driver distraction events (e.g., cell phone usage) and measures the current reaction times during real time road conditions. Results of the monitoring may be displayed to the driver **19** and/or additional parties to determine if the distracting activities event should be discontinued.

System **2** performs the following functions:

1. Measurement of a driver's base line reaction times for a given set of events (e.g., stopping at an intersection, reaction time to brake when a vehicle in front is slowing down, lane change events, lane weaving/wondering, etc.).
2. Measuring a driver reaction time delta for a given set of driving events.
3. Correlating driving events with specific mobile device operations (i.e., distraction events).
4. Generating a warning (e.g., a tone or sound) indicating that a reaction time analysis reaches a threshold. Additionally, a delayed notification (heads up display, dashboard, console, mobile phone, email, etc.) may be enabled.
5. Optionally perform a given action (e.g., disable a radio, etc. if the distraction event causes a reaction time exceeding a threshold considered for safe driving).

An implementation example for determining baseline reaction times for events (e.g., stopping times, lane change events, lane weaving, etc.) is described as follows:

System **2** detects that driver **19** is currently using a mobile device while driving vehicle **22**. In response, system **2** begins to measure reaction times while the user is not distracted in order to establish a baseline. The baseline may be developed with a requirement for a predetermined number of samples. System **2** enables sensors **7** to record events (e.g., vehicle braking) and in response, system **2** measures a time period for a user to react to the event (e.g., vehicle braking). A number and type of baseline events are determined based on capabilities of vehicle **22** and external available data points. For example, certain vehicles comprise external proximity sensors that determine when a vehicle in front is braking and to what degree a distance between the vehicles is closing (i.e., how aggressively they are braking). In response, system **2** uses the event (i.e., braking event) to trigger a baseline measurement. Alternatively, system **2** may use a mobile application (on a mobile device) to trigger an on board camera to evaluate specified driving conditions (e.g., a distance of a leading vehicle). Additionally, the mobile device may detect a color of a stop light and measure the color as a "red light start" event or time. With respect to the aforementioned implementation example for determining baseline reaction times, program instructions **17** enable the following process steps:

1. Identification of a driver **19**.
2. Monitoring vehicle **22** events.
3. Monitoring cellular telephone inactivity using a device usage log.
4. Monitoring a corresponding or expected action from driver **19** and logging the action to a driver action log.

An implementation example for detecting and correlating distracted driver activity with specific vehicle operations is described as follows:

A cell phone registers with computer **14** in vehicle **22** prior to starting vehicle **22** (or immediately after vehicle **22** is started). For example, a Bluetooth, NFC, or Wi-Fi pairing process may be used to initiate a registration process. Upon enablement of the pairing event, computer **14** is linked directly the cellular telephone. In response, vehicle motion sage events are monitored and each monitored event is logged with a date/time stamp in a device usage log. Additionally, vehicle **22** maintains a vehicle event log that tracks vehicle parameters such as, inter alia, speed, acceleration, lane changes, turn signal events, brake events, distances, routes, etc. Therefore (since device usage log and vehicle event log have date/time stamps), computer **14** may correlate when a driver's phone is inactive/active and whether or not the driver **19** is in motion or stopped. With respect to the aforementioned implementation example for detecting and correlating distracted driver activity, program instructions **17** enable the following process steps:

1. Authenticating (or pairing) a phone with vehicle **22**.
   A. Opening vehicle **22** door with the phone (e.g., via an NFC chip).
   B. Starting vehicle **22** with the phone (e.g., via an NFC/Bluetooth chip).
   C. Pairing the phone after vehicle **22** is started (e.g., via Bluetooth).
   D. Pairing the phone via 3G, 4G, and/or a mobile application from the vehicle manufacturer accessing computer **14**.
2. Transmitting device usage logs to computer **14** or alternatively the driver's phone.
3. Retrieving vehicle event logs from computer **14**.
   A. Correlating device and vehicle events.

An implementation example for measuring a change in driver reaction time for a given set of events is described as follows:

The measurement process comprises retrieving recorded, real-time, or near real-time data from computer **14** and determining correlations between events. The correlations may utilize baseline data or data retrieved from just prior to an event for a comparison point (e.g. all data prior to an incoming telephone call could be considered baseline data and data from the time of incoming call to call determination may be used to compare against the baseline data).

With respect to the aforementioned implementation example for measuring a change in driver reaction time, program instructions **17** enable the following process steps:

1. Identifying potential distraction events in data (e.g., an incoming call, a radio station change, etc.).
2. For each key factor affecting driving safety (e.g., speed, braking, etc.), comparing baseline data with data retrieved

during a distraction event and sub-events during an event period (e.g., call initiation (first ring to answer), conversation period, call termination (hang-up+n seconds−n seconds, handset usage, Bluetooth, etc.).

3. Comparing baseline and key factors associated with the data. For example, if speed comprises the datum being examined, a determination is made with respect to a variation in the speed prior to the event and during the event or sub-events. The comparison may consider external factors from other devices (e.g., GPS data, road signs, etc.). A variation in speed determination may include:

A. Determining if a speed change exceeds a small delta (e.g. >3-5 mph)?

B. If no, then no speed distraction is detected.

C. If yes, then were there contributing factors as determined by other systems (e.g., there was a change in allowed speed limit as communicated by GPS system or intelligent road signs). If contributing factor is attributed to the change in speed, then no speed distraction detected.

D. If no, then determine that the event contributed to a potentially unsafe speed adjustment (either up or down).

E. Log or notify the unsafe speed event.

F. Repeat the process for all key factors (e.g., braking, lane sway, etc.).

An implementation example for correlating driving events with specific mobile device operations is described as follows:

System **2** determines driver functions when determined reaction times (for an event) exceed a baseline threshold. The event is correlated to a determined behavior.

With respect to the aforementioned implementation example for correlating driving events, program instructions **17** enable the following process steps:

1. A baseline associated with a skill and attentiveness of driver **19** is determined.

2. The driver's current skill and attentiveness (e.g., reaction times) is monitored and when the reaction times exceed a determined threshold, driver functions are determined. For example:

A. An onboard camera may be used to determine if driver **19** was not looking at the road.

B. It may be determined if radio stations or CDs were being changed.

C. Listening sensors within vehicle **22** may be used to determine if a call came in or if an active Bluetooth connection is enabled.

D. It may be determined if a GPS device has been modified.

3. A determined distraction event is logged into system **2**.

4. A log of phone usage is retrieved and phone activity is associated with threshold exceeded reaction times.

An implementation example for displaying a reaction time analysis (e.g., via a heads up display, dashboard, console, mobile phone, email, etc.) for a driver **19** is described as follows:

An analysis of the driver's behavior may be presented to driver **19** in real-time, near real-time, at the end of a driving session, or at user request. The analysis may be presented via a heads up display system, a dashboard/console text display, a radio display, in vehicle computer and text to speech system, etc. Additionally, system **2** may transmit the analysis to the driver's Bluetooth device as an audio message, via e-mail, text, or data to a specific application, etc. Alternatively, the analysis may be transmitted to other parties (e.g., parents of young drivers, insurance companies, etc.). Additionally, vehicle **22** may generate an audible indicating a detected distraction.

FIG. **2** illustrates an algorithm detailing a process flow enabled by system **2** of FIG. **1** for providing a means for associating driver reaction times during a driver distraction event, in accordance with embodiments of the present invention. Each of the steps in the algorithm of FIG. **2** may be enabled and executed in any order by a computer processor executing computer code. In step **200**, a driver of a vehicle is identified. In step **202**, (baseline or non-distracted) reaction times associated with a set of driving functions executed by the driver are determined. The set of driving functions are executed by the driver during a first driving process of the vehicle. In step **204** (after determining the reaction times), the driver is detected in the vehicle. In step **208**, it is determined that the driver is currently driving the vehicle. In step **212**, currently executed driving functions associated with the set of driving functions are monitored. In step **214**, current reaction times associated with the currently executed driving functions are identified. In step **218**, the current reaction times are compared to the reaction times and (based on results of the comparing) differences between the current reaction times and the reaction times are determined. Additionally, the differences may be compared to predetermined thresholds to determine if the differences exceed the predetermined thresholds. In step **220**, the differences are logged to a driver action log. In step **224**, it is determined (based on the driver action log) that the driver is currently executing a first driving distraction event. Determining that the driver is currently executing a first driving distraction event may include the flowing process 1 and process 2:

Process 1

1. Enabling a video retrieval device in the vehicle.
2. Retrieving a video stream of the driver during the currently executed driving functions.
3. Analyzing the video stream.
4. Determining the first driving distraction event based on results of the analyzing.

Process 2

1. Monitoring devices enabled within the vehicle.
2. Analyzing results of the monitoring.
3. Determining the first driving distraction event based on results of the analyzing.

In step **228**, specified functions (associated with the currently executed driving functions and/or the first driving distraction event) are executed based on results of steps **218** and/or step **224**. Executing the specified functions may include:

1. Notifying an authority of the differences.
2. Alerting the driver of the differences.
3. Disabling/enabling functions associated with said currently executed driving functions (e.g., braking functions, steering functions, etc.). Steps 2 and 3 are associated with monitoring log files within a device (or an application that is installed on the device that transmits event data to a vehicle computer). For example, if a texting process is initiated, the device or application may transmit a wireless signal to the vehicle computer.
4. Modifying attributes of a function (e.g., braking functions, steering functions, etc.) associated with the currently executed driving functions.
5. Disabling functions of a device (e.g., a radio, a cellular telephone, etc.) associated with the first driving distraction event.
6. Modifying functions of a device associated with the first driving distraction event (e.g., adjust a volume on a radio, enabling a hands free speaker on a cellular telephone, etc.).

FIG. **3** illustrates a computer system **90** (e.g., computer **14** of FIG. **1**) used by system **2** of FIG. **1** for associating driver

reaction times during a driver distraction event, in accordance with embodiments of the present invention. The computer system **90** includes a processor **91**, an input device **92** coupled to the processor **91**, an output device **93** coupled to the processor **91**, and memory devices **94** and **95** each coupled to the processor **91**. The input device **92** may be, inter alia, a keyboard, a mouse, a camera, a touchscreen, etc. The output device **93** may be, inter alia, a printer, a plotter, a computer screen, a magnetic tape, a removable hard disk, a floppy disk, etc. The memory devices **94** and **95** may be, inter alia, a hard disk, a floppy disk, a magnetic tape, an optical storage such as a compact disc (CD) or a digital video disc (DVD), a dynamic random access memory (DRAM), a read-only memory (ROM), etc. The memory device **95** includes a computer code **97**. The computer code **97** includes algorithms (e.g., the algorithm of FIG. **2**) for associating driver reaction times during a driver distraction event. The processor **91** executes the computer code **97**. The memory device **94** includes input data **96**. The input data **96** includes input required by the computer code **97**. The output device **93** displays output from the computer code **97**. Either or both memory devices **94** and **95** (or one or more additional memory devices not shown in FIG. **4**) may include the algorithm of FIG. **2** and may be used as a computer usable medium (or a computer readable medium or a program storage device) having a computer readable program code embodied therein and/or having other data stored therein, wherein the computer readable program code includes the computer code **97**. Generally, a computer program product (or, alternatively, an article of manufacture) of the computer system **90** may include the computer usable medium (or the program storage device).

Still yet, any of the components of the present invention could be created, integrated, hosted, maintained, deployed, managed, serviced, etc. by a service supplier who offers to associate driver reaction times during a driver distraction event. Thus the present invention discloses a process for deploying, creating, integrating, hosting, maintaining, and/or integrating computing infrastructure, including integrating computer-readable code into the computer system **90**, wherein the code in combination with the computer system **90** is capable of performing a method for associating driver reaction times during a driver distraction event. In another embodiment, the invention provides a business method that performs the process steps of the invention on a subscription, advertising, and/or fee basis. That is, a service supplier, such as a Solution Integrator, could offer to associate driver reaction times during a driver distraction event. In this case, the service supplier can create, maintain, support, etc. a computer infrastructure that performs the process steps of the invention for one or more customers. In return, the service supplier can receive payment from the customer(s) under a subscription and/or fee agreement and/or the service supplier can receive payment from the sale of advertising content to one or more third parties.

While FIG. **3** shows the computer system **90** as a particular configuration of hardware and software, any configuration of hardware and software, as would be known to a person of ordinary skill in the art, may be utilized for the purposes stated supra in conjunction with the particular computer system **90** of FIG. **3**. For example, the memory devices **94** and **95** may be portions of a single memory device rather than separate memory devices.

While embodiments of the present invention have been described herein for purposes of illustration, many modifications and changes will become apparent to those skilled in the art. Accordingly, the appended claims are intended to encompass all such modifications and changes as fall within the true spirit and scope of this invention.

What is claimed is:

1. A method comprising:

determining, by a computer processor of a computing system, reaction times associated with a set of driving functions executed by a driver of a vehicle, wherein said set of driving functions are executed by said driver during a first driving process of said vehicle;

after said determining said reaction times, detecting by said computer processor, said driver in said vehicle;

determining, by said computer processor, that said driver is currently driving said vehicle; monitoring, by said computer processor, currently executed driving functions associated with said set of driving functions;

identifying, by said computer processor, current reaction times associated with said currently executed driving functions;

comparing, by said computer processor, said current reaction times with said reaction times;

determining, by said computer processor based on results of said comparing, differences between said current reaction times with said reaction times;

logging, by said computer processor, said differences to a driver action log;

determining, by said computer processor based on said driver action log, that said driver is currently executing a first driving distraction event; and

executing, by said computer processor based on said determining that said driver is currently executing a first driving distraction event, specified functions associated with at least one of said currently executed driving functions and said first driving distraction event.

2. The method of claim **1**, wherein said executing said specified functions comprises:

alerting said driver of said differences.

3. The method of claim **1**, wherein said executing said specified functions comprises:

disabling functions associated with said currently executed driving functions.

4. The method of claim **1**, wherein said executing said specified functions comprises:

modifying attributes of a function associated with said currently executed driving functions.

5. The method of claim **1**, wherein said executing said specified functions comprises:

disabling functions of a device associated with said first driving distraction event.

6. The method of claim **1**, wherein said executing said specified functions comprises:

modifying functions of a device associated with said first driving distraction event.

7. The method of claim **1**, further comprising:

comparing, by said computer processor, said differences to predetermined thresholds; and

determining, by said computer processor based on results of said comparing said differences to said predetermined thresholds, that said differences exceed said predetermined thresholds, wherein said executing is further based on said differences exceeding said predetermined thresholds.

8. The method of claim **1**, wherein said executing said specified functions comprises:

notifying an authority of said differences.

9. The method of claim **1**, wherein said determining that said driver is currently executing a first driving distraction event comprises:

enabling a video retrieval device in said vehicle;

retrieving a video stream of said driver during said currently executed driving functions;

analyzing said video stream; and

determining said first driving distraction event based on results of said analyzing.

10. The method of claim **1**, wherein said determining that said driver is currently executing a first driving distraction event comprises:

monitoring devices enabled within said vehicle;

analyzing results of said monitoring; and

determining said first driving distraction event based on results of said analyzing.

11. The method of claim **1**, further comprising:

providing at least one support service for at least one of creating, integrating, hosting, maintaining, and deploying computer-readable code in the computing system, said code being executed by the computer processor to implement said determining said reaction times, said detecting, said determining that said driver is currently driving said vehicle, said monitoring, said identifying, said comparing, said determining said differences, said logging, said determining that said driver is currently executing said first driving distraction event, and said executing.

12. A computing system comprising a computer processor coupled to a computer-readable memory unit, said memory unit comprising instructions that when executed by the computer processor implements a method comprising:

determining, by said computer processor, reaction times associated with a set of driving functions executed by a driver of a vehicle, wherein said set of driving functions are executed by said driver during a first driving process of said vehicle;

after said determining said reaction times, detecting by said computer processor, said driver in said vehicle;

determining, by said computer processor, that said driver is currently driving said vehicle;

monitoring, by said computer processor, currently executed driving functions associated with said set of driving functions;

identifying, by said computer processor, current reaction times associated with said currently executed driving functions;

comparing, by said computer processor, said current reaction times with said reaction times;

determining, by said computer processor based on results of said comparing, differences between said current reaction times with said reaction times;

logging, by said computer processor, said differences to a driver action log;

determining, by said computer processor based on said driver action log, that said driver is currently executing a first driving distraction event; and

executing, by said computer processor based on said determining that said driver is currently executing a first driving distraction event, specified functions associated with at least one of said currently executed driving functions and said first driving distraction event.

13. The computing system of claim **12**, wherein said executing said specified functions comprises:

alerting said driver of said differences.

14. The computing system of claim **12**, wherein said executing said specified functions comprises:

disabling functions associated with said currently executed driving functions.

15. The computing system of claim **12**, wherein said executing said specified functions comprises:

modifying attributes of a function associated with said currently executed driving functions.

16. The computing system of claim **12**, wherein said executing said specified functions comprises:

disabling functions of a device associated with said first driving distraction event.

17. The computing system of claim **12**, wherein said executing said specified functions comprises:

modifying functions of a device associated with said first driving distraction event.

18. The computing system of claim **12**, wherein said method further comprises:

comparing, by said computer processor, said differences to predetermined thresholds; and

determining, by said computer processor based on results of said comparing said differences to said predetermined thresholds, that said differences exceed said predetermined thresholds, wherein said executing is further based on said differences exceeding said predetermined thresholds.

19. The computing system of claim **12**, wherein said executing said specified functions comprises:

notifying an authority of said differences.

20. A computer program product for technical solution analysis, the computer program product comprising:

one or more computer-readable, tangible storage devices;

program instructions, stored on at least one of the one or more storage devices, to determine reaction times associated with a set of driving functions executed by a driver of a vehicle, wherein said set of driving functions are executed by said driver during a first driving process of said vehicle;

program instructions, stored on at least one of the one or more storage devices, to detect said driver in said vehicle after determining said reaction times;

program instructions, stored on at least one of the one or more storage devices, to determine that said driver is currently driving said vehicle;

program instructions, stored on at least one of the one or more storage devices, to monitor currently executed driving functions associated with said set of driving functions;

program instructions, stored on at least one of the one or more storage devices, to identify current reaction times associated with said currently executed driving functions;

program instructions, stored on at least one of the one or more storage devices, to compare said current reaction times with said reaction times;

program instructions, stored on at least one of the one or more storage devices, to determine differences between said current reaction times with said reaction times;

program instructions, stored on at least one of the one or more storage devices, to log said differences to a driver action log;

program instructions, stored on at least one of the one or more storage devices, to determine that said driver is currently executing a first driving distraction event; and

program instructions, stored on at least one of the one or more storage devices, to execute specified functions associated with at least one of currently executed driving functions and a first driving distraction event.

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